

DESCRIPTION OF A RECENTLY DISCOVERED FOSSIL SCULPIN FROM NEVADA REGARDED AS *COTTUS BELDINGI*.

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I have received from Mr. F. B. Headley, superintendent of irrigation for the United States Department of Agriculture, stationed at Fallon, Nevada, a number of small fossil sculpins from deposits of Lake Lahonton. I identify these with a living species of the same region, *Cottus beldingi* Eigenmann and Eigenmann.

COTTUS BELDINGI Eigenmann and Eigenmann.

Head 3 times in length to base of caudal; depth about 4; pectoral about as long as head; dorsal rays VII to VIII, 17 to 19; anal 12 to 14; ventral rays I, 4; the fin 3 in head; caudal a little longer than head; vertebrae about $12+20=32$. Length of specimens in all cases, $2\frac{1}{2}$ inches.

Body moderately elongate; head large, more or less crushed in all examples so that individual bones can not well be traced. A short forked spine on preopercle present in one example. Insertion of dorsal fin not far behind head; its spines very slender, the second longest, somewhat produced, about half head; other spines rapidly shortened; soft rays slender, rather high but shorter than longest spine (the last rays of dorsal and anal more or less obscure). Pectoral rays 11 or 12, the fin broad; actinosts forming a considerable flat plate; ventrals shorter, 3 in head, entirely separate; thoracic, present in three examples, the rays strong and relatively long; vertebrae strong, short, and deep, hour-glass shaped, each with two prominent longitudinal ridges. Hypural strong; caudal broad, rounded, with 15 rays. No trace of scales or spinules.

Of this species we have seventeen examples, all more or less broken, besides several fragments. These are imbedded in a chalky or calcareous deposit containing many diatoms, with fine sand of crushed chalcedony and quartz, mixed with more or less clay.

Mr. Headley observes that the specimens were obtained from "a cave on the east side of the Carson Sink about five miles south of

Stillwater. The cave is about 50 feet above the floor of the old Lake Lahontan and probably 350 feet below the highest beach line. The fossils were 6 feet below the surface of the ground. The walls of the cave were encrusted with tufa rock deposited by the old lake. The specimens were plentiful, in a layer not over one foot wide."

The question of the age of this deposit has been referred to Prof. J. C. Jones, of the University of Nevada, who decides, after personal examination of the deposits, that "the fish skeletons were deposited in Lahontan-time and probably not over a thousand or fifteen hundred years in age, if my conclusion as to the age of Lake Lahontan are correct. . . . Their living relatives should be found in Pyramid Lake, which is a remnant of Lake Lahontan. The greater bulk of the diatomaceous earth in Nevada was deposited during Middle Miocene time in western Nevada. The Lake Lahontan beds contain very little diatomaceous earth as the waters were rather muddy, but it is possible that in the protected cave, the diatoms lived in water clear enough to have formed rather pure diatomaceous earth of Lahontan age."

The specimens here figured are numbered 10905-10907 in the collection of the United States National Museum. Cotypes are in the collection of Stanford University. This description is drawn from the entire series, not one having all the fins complete. The species is evidently a *Cottus*, and it may be identical with one or more of the four fossil species described by Cope in 1883, from Pliocene deposits of the former Lake Idaho. (*Cottus divaricatus*, *D. pontifex*, *D. hypoceras* and *C. cryptotremus*.) These are all known only as many detached preopercles, and can not well be contrasted with *Cottus beldingi*.

The last named species, first described (in 1891) from Lake Tahoe and Donner Lake, is now found in all suitable waters throughout the Lahontan Basin, and is recorded from various localities in the upper Columbia (Jordan and Evermann). The only apparent differences are these: in *Cottus beldingi* the preopercular spine is simple and the ventral rays seem a little more slender than in the fossil.

EXPLANATION OF PLATE.

Fossil examples of *Cottus beldingi* Eigenmann and Eigenmann. Upper views are ventral aspects and the lower ones show dorsal views. Natural size.